# Biased Judges: Evidence from French Environmental Cases

Pierre Bentata, Yolande Hiriart

crese
CENTRE DE RECHERCHE
SUR LES STRATÉGIES ÉCONOMIQUES

# Biased Judges: Evidence from French Environmental Cases

Pierre BENTATA and Yolande HIRIART

December 2015

**Working paper No. 2015 – 17**

CRESE
30, avenue de l'Observatoire
25009 Besançon
France
http://crese.univ-fcomte.fr/



UFC
UNIVERSITÉ DE FRANCHE-COMTÉ

# Biased Judges: Evidence from French Environmental Cases*

Pierre Bentata‡and Yolande Hiriart††

December 9, 2015

**Abstract**

Using an original database of 614 judgements in the French supreme courts from 1956 to 2010, we test for possible biases in judges' decisions in the field of environmental accidents, focusing on a difference in treatment between private parties and the government as litigant. Two separate institutions deal with environmental cases in France, namely the *Conseil d'État* (Supreme Administrative Tribunal) for public utilities and central and local government, and the *Cour de cassation* (Supreme Civil Court) for private firms. We run bivariate Probit regressions to explain pro-defendant decisions and reversals of decisions. Overall, courts treat plaintiffs and defendants differently. A pro-defendant decision and a reversal of decision are less likely to occur: (i) when the appeal is initiated by the defendant rather than by the plaintiff; (ii) in the *Conseil d'État* rather than in the *Cour de cassation*. The *Conseil d'État* is harsher with defendants than the *Cour de cassation*. These results could be indicative of a bias of the lower administrative tribunals in favor of public utilities and/or the government.

JEL classification: K13, K32, K41.

Keywords: environmental accidents, French cases, litigation, Appellate Courts, judicial review, judicial behavior, biased judges, administrative tribunals.

*We thank Julie Le Gallo for helpful comments and suggestions, together with participants in the *31st Annual Conference of the European Association of Law and Economics* (EALE), Aix-en-Provence, France, September 2014, the *First Annual Conference of the French Association of Environmental and Resource Economists* (FAERE), Montpellier, September 2014, the *International Meeting in Law and Economics*, Nanterre, March 2014, and in the $23^{ièmes}$ *Rencontres de l'environnement* (FAERE), Le Havre, March 2014. The research leading to these results has received funding from the Institut Universitaire de France (IUF).

‡Université de Paris 2 (CRED). Email: pierre.bentata@u-paris2.fr.

††Université de Franche-Comté (CRESE) and Institut Universitaire de France (IUF), France. E-mail: yolande.hiriart@univ-fcomte.fr.

# 1 Introduction

Basic justice would seem to require that the law should deal in the same way with individuals in similar circumstances. However, studies of adjudications in various countries and domains in recent decades reveal that litigants may be treated differently depending on their standing: for instance, one can find a difference of treatment between employers and employees in labor courts, but also between debtors and creditors in bankruptcy courts and, more often, between plaintiffs and defendants. In the last category, studies have particularly focused on the difference between private parties and the government as litigants.

In the context of environmental accidents, one might wonder whether cases involving public utilities or central or local government receive any particular treatment. Environmental accidents are usually caused by corporate entities, be they public or private. However, individuals that are representatives of the State, such as the mayor or the local chief of the police (*Préfet*), may also find themselves in court, as defendants, because they have permitted an activity that has caused environmental damage or generated a risk of future environmental harm. The French legal system separates cases involving public utilities and the government[1] from cases involving private corporations. Indeed, cases follow different routes: (i) those implicating private companies are first judged in a standard civil court (*Cour de première instance*) then appeals ultimately go to the *Cour de cassation* (Supreme Civil Court); (ii) cases implicating public utilities or the government are first judged in an administrative tribunal then appeals ultimately go to the *Conseil d'État* (Supreme Administrative Court).

In this paper, we test for a possible bias of judges in the supreme instances when determining French environmental cases.

As is common in the literature on courts' biases, we focus on the severity of judges with respect to one type of litigants. For this purpose, we first test for a possible difference in the win rates of defendants between the two highest courts. This literature has sustained the idea that reversal by upper courts of decisions taken by lower courts could be the signal of corrective behavior by the former, for they believe lower courts are biased. We thus scrutinize these reversal decisions in the two highest courts in France. In addition, we provide novel insights by analyzing supreme

[1] By abuse of terminology, any representative of the State will be referred to as the government: in the present context, these representatives are often the mayor or the local chief of police.

courts decisions to refer cases back to lower courts and tribunals for adjudication as a proxy for supreme courts trust in those bodies in the capacity to review the cases.

The observations come from an original database covering 614 judgments of the highest courts (the entire set of French environmental cases) for the period 1956-2010.[2] One difficulty is that there are two separate jurisdictions. However, the database offers control variables to ensure that differences in the decisions really come from judges' behavior and not from other factors like differences in safety policy.[3]

We run bivariate Probit regressions to explain pro-defendant and reversal decisions. We find a difference in the treatment of plaintiffs and defendants in both estimations.[4] A pro-defendant decision and a reversal of decision are less likely to occur: (i) when the appeal is initiated by the defendant rather than the plaintiff; (ii) in the *Conseil d'État* rather than the *Cour de cassation*. Last, the estimation on referral decisions shows that the *Conseil d'État* sends less cases back to the lower courts than the *Cour de cassation*. Assuming that the intensity of referral decisions is a proxy for the degree of trust of an upper court toward lower ones,[5] this last result could be indicative of less trust from the *Conseil d'État*. This additional result reinforces the main findings: (i) overall, upper courts treat plaintiffs and defendants differently, with a pro-plaintiff bias; (ii) the *Conseil d'État* is harsher on defendants than the *Cour de cassation*. In accordance with the related literature, we could interpret this as corrective behavior: this pro-plaintiff bias revealed in upper courts could indeed correct for a pro-defendant bias in lower courts, and this would be particularly the case from administrative tribunals towards public utilities and/or the government.

There exists a substantial empirical literature on litigation, even when restricted to courts' de-

[2] See Bentata (2013, 2014).

[3] However, it is true that there could be a difference between civil and administrative law, and cases themselves can be intrinsically different between the two branches.

[4] It should be clear at this point that a defendant in our analysis is always a firm that caused environmental harm and the plaintiff is the victim. No party can change her status from plaintiff to defendant and vice-versa, just be filing an appeal in the upper court. Hence, when analyzing a difference of treatment between plaintiffs and defendants in the *Conseil d'État*, there is no ambiguity: we analyze a difference of treatment between private parties and the government as a litigant.

[5] Indeed, in French law, Supreme Courts judge the application of the law itself. Consequently, when they reverse a decision, they have to send the case back to a lower court (Art. 625 and 626 of the *Code de procédure civile* for the *Cour de cassation* and Art. L821-2 of the *Code de la justice administrative* for the *Conseil d'État*). However, both courts can provide a final decision if they consider that *"lower courts do not have jurisdiction"* (Art. L627 of the *Code de la procédure civile* referring to Art. L411-3 of the *Code de l'organisation judiciaire*) or that making a final decision *"is in the best interest of the administration of justice"*. Hence, Supreme Courts have some room to ultimately adjudicate cases they have to review (see Boré, 2011).

cisions and their possible biases.[6] This literature has mainly studied biases in favor of defendants versus plaintiffs, but also biases for the government against private litigants, employers against employees, and debtors against creditors. It has been enriched by taking into account the selection effect (see below), judges' career concerns, judges' political preferences, social or economic conditions, the composition of courts, case categories, gender, religion, but also appellate judges' misperceptions of the lower courts' attitude. Let us try to give a brief overview of the most closely related papers.

Our main results run counter to the conclusion of quite a number of quantitative studies in which defendants outperform plaintiffs on civil appeals. Among the studies carried out on U.S. federal and state intermediate appellate courts, Clermont and Eisenberg (1992) show that plaintiffs' win rates before juries or judges differ significantly.[7] More importantly for our purpose, using data on all U.S. federal civil trials and appeals from 1988 to 2000, Clermont and Eisenberg (2001, 2002) show that defendants succeed more than plaintiffs on appeal from civil trials, explaining this by appellate judges' attitudes.[8] This difference is confirmed by Eisenberg (2004) for federal courts data covering all case categories, and the appellate court effect is confirmed for employment discrimination cases.[9] However, it should be mentioned that Eisenberg and Farber (2013) provide evidence that the plaintiffs' lower success rate on appeal can be due to them pursuing lawsuits even when they should win on the merits less than half the time. The lower success rate on appeal thus may not find its origin in appellate judges' attitude. Last, Eisenberg, Fisher, and Rosen-Zvi (2011) do not find evidence of asymmetric reversal rates favoring defendants in the Israeli Supreme Court's appellate cases.

A strand of literature analyzes the possible bias of judges in connection with economic conditions. This is the purpose of Ichino, Polo, and Rettore (2003) and Marinescu (2011) who show that labor market conditions influence courts' decisions. Lambert Mogiliansky, Sonin, and Zhu-

[6]Theoretical analyzes have also been developed on judicial bias and its consequences for efficiency, but their focus is a little far from our own. See Miceli (2009, 2010), for instance, or Gennaioli and Rossi (2010) and Gennaioli (2013). One should also mention Shavell (1995)'s study of the error correction with the appeal process.

[7]This may not be due to a difference between the behavior of juries and judges, but rather to the fact that attorneys select and submit cases to juries that are particularly difficult to win for plaintiffs.

[8]Using data on all terminated cases in the federal courts from 1988 to 1997, Clermont and Eisenberg (2000) reveal the same anti-plaintiff effect: defendants succeed significantly more often on appeal from civil trials than plaintiffs, and specially from jury trials. Authors attribute this appellate judges' attitude to their perception of a pro-plaintiff bias at trial court level. Using a unique dataset on a comprehensive cohort of tried state court cases, Eisenberg and Heise (2009) obtain similar results from 8038 trials and 549 concluded appeals from 46 large counties in the U.S., confirming the main findings from federal courts.

[9]Both Clermont and Eisenberg (2001) and Eisenberg (2004) confirm the appellate court effect, meaning judges' attitude, even when taking into account the different trial-win rates - the case selection process - mentioned below.

ravskaya (2006) show that regional political characteristics together with the quality of the regional judiciary affect judicial decisions about the numbers and types of bankruptcy procedures in Russia. The effect of judges' political preferences on case outcomes is studied by Ashenfelter et al. (1995), Choi and Gulati (2008) and Hall (2010). Other authors study the effect of gender (Choi et al., 2011, Greiner and Rubin, 2011, Bogoch and Don-Yechiya, 1999) and religion (Gazal-Ayal and Sulitzeanu-Kenan, 2010).

A recurrent message in this literature is that when analyzing courts' decisions, one cannot ignore that the set of lawsuits and plaintiffs is far from a random selection among potential claims and potential claimants. Indeed, the cases are not representative of the entire population initially, nor the set of potential claimants, but themselves result from a selection process. Priest and Klein (1984) have advanced this theory, which was further developed and tested by Waldfogel (1995), Eisenberg (1991) and Eisenberg and Farber (1997, 2003). The central point of the selection process theory remains that one should be careful when drawing inferences about the legal system from studies of tried cases. In our analysis, outcomes before higher courts are favorable to plaintiffs: we suggest an interpretation in which the upper courts adopt corrective behavior. However, we should keep in mind that this success rate for plaintiffs could also come from the fact that cases where defendants could win have not reached the upper court level. In any case, we cannot control for case selection at this stage since we lack the history of our cases, and thus the information on what happened in lower courts.

The paper closest to ours remains Amaral-Garcia and Garoupa (2012) who test for the bias of administrative tribunals in favor of the government in the field of medical malpractice in Spain. It is remarkable that our main result departs from theirs: whereas they find no clear evidence that administrative tribunals decide more favorably for the defendants than civil courts, we show a different treatment of defendants by the *Conseil d'État* that could suggest the reverse. Our result on tougher decisions by the *Conseil d'État* against defendants - public utilities and the government - contrasts with Eisenberg, Fisher, and Rosen-Zvi (2011), who find the government to be a highly successful litigant both in obtaining review from the Israeli Supreme Court and in obtaining reversal of judgments it appealed.

The paper is organized as follows. Section 2 depicts the legal background. Section 3 describes the dataset. Section 4 reports the estimations and provides the main results. Section 5 briefly concludes by pointing out avenues for further work.

# 2 The legal background

## 2.1 The French legislation

In France, as in many civil law countries, there is a separation between civil courts and administrative tribunals. Civil courts deal with disputes between private parties whereas administrative subject-matter jurisdiction deal with the powers of the administrative authorities and their relation with private parties. More precisely, in environmental cases, a dispute will be tried in administrative tribunals if the defendant is a public legal person, a state-owned company or a private company entitled to provide public services and exercising an administrative authority.[10] Otherwise, they are subject to civil law, even though they provide public goods and services.[11] Hence, environmental administrative litigations may concern either a controversy over a decision of a state official (e.g. authorization to start up a potentially environmentally unfriendly activity, implementation of a controversial local regulation, or stringency of an environmental impact assessment) or a dispute over an action by a public defendant that resulted in harm to private plaintiffs.

The main reason for such a distinction between private and public defendants lies in the fact that "*public authorities have specific powers and obligations that require that their action should not be reviewed by ordinary courts*" (Frydman, 2008). Consequently, the determination of liability is different in administrative tribunals and civil courts. In civil law, fault-based liability is the rule (except for the most environmentally unfriendly facilities called ICPE facilities,[12] which are subject to strict liability) and the criterion for negligence is the reasonable man standard (*bon père de famille*). In administrative law, the standard of due care is much higher as state-owned companies and state officials have an obligation of sanitary security[13] and cannot claim that their level of care was limited by a budget constraint.[14] Furthermore, the procedures are also different. The procedure before administrative tribunals is inquisitorial (*inquisitoire*) whereas

[10] Private companies with a public service mission are subject to administrative law if they are entitled to take administrative decisions, i.e. *prérogative de puissance publique*. See *Arrêt Magnier in CE January 1961, 13th, and CE May 1991, 15th, Association Girondins de Bordeaux FC*.

[11] *Tribunal des Conflits*, November 1995, 27th, *Le Troedec*, and *Arrêt Temier in CE February 1903, 6th*.

[12] *Installations classées pour la protection de l'environnement.*

[13] The first reference to this obligation appeared in 1902 (Law of February 1902, 15th, relative to the protection of public health). The criterion became more stringent over the century as many public health and environmental scandals occurred. For instance, the State has been condemned for "public health deficiencies" in the HIV-contaminated blood affair (CE April 1992, 9th, $n.$138653) and in the asbestos affair (CE March 2004, 3rd $n.$241153).

[14] Cass. Crim., July 2nd 1998, $n.$97-83.286.

the civil procedure is accusatorial (*accusatoire*). This means that administrative tribunals direct the course of the procedure, and are in charge of finding out the facts that may be relevant for their decisions (Frydman, 2008). Consequently, administrative judges have more scope than civil judges to make their decisions. Hence, if judges are likely to be biased, the effect would be greater in administrative tribunals.

### 2.2 The appeal process

Civil courts and administrative tribunals are organized along similar lines. Both are pyramidal with the *Cour de cassation* and the *Conseil d'État* respectively at the apex of the civil and the administrative branches. Civil and administrative cases are respectively first tried in *Cours d'Instance* and in *Cours Administratives d'Instance*, and can be appealed in *Cours d'Appel* and in *Cours Administratives d'Appel*. As far as litigation is concerned,[15] the *Cour de cassation* and the *Conseil d'État* share a common feature: both have to harmonize case law to ensure that texts are interpreted in the same way nationwide.[16] Moreover, they do not rule on the merits of a case, but rather on the proper application of the rules by lower courts (i.e. both Supreme Courts judge the decisions of lower courts). Hence, even though administrative and civil rules might differ, the task of judges from both Supreme Courts is similar. Consequently, observing Supreme Courts' decisions is relevant when comparing the application of the law by lower civil and administrative courts.

### 2.3 Professional backgrounds of administrative and civil judges

In France, administrative and civil laws are considered as very different branches of law, with their own logic and their own process. For this reason, administrative and civil judges often have very different backgrounds.

Civil judges have a special statutory protection (referred to as *Magistrat*). To become civil judges, candidates have to attend the National School for the Judiciary (*École Nationale de la Magistrature*) for a period of 31 months. There are three different competitive examinations depending on the applicant's professional experience: the first one is open to students with a Master degree in law

[15] Indeed, the *Conseil d'État* exercises two different roles: it is not only the Supreme Court of the administrative jurisdiction but also the most important legal advisor to the Government.

[16] See About the Court, Cour de Cassation, www.courdecassation.fr/about_the_court_9256.html.

who are at least 27 years of age. The second and third ones are open to people who already have a substantial experience in the legal domain. The vast majority of civil judges come from the first examination process (e.g. in 2006, $88\%$ of newly graduated judges where former Law Master students who entered the National School for the Judiciary through the first examination process).[17] As a result, the majority of successful candidates begin their professional careers as civil judges and most of them remain civil judges until retirement.

Things are quite different for administrative judges. First of all, they are usually civil servants and not *Magistrats*: they do not benefit from the same level of protection and independence as the latter with respect to the State. Second, except for judges from the *Conseil d'État* who, for the majority, attended the National School of Administration (*École Nationale d'Administration*) after a tough competitive examination, administrative judges are recruited among civil servants, lawyers and high level law graduates. This is due to the gap between the low number of students that intend to become administrative judges and the need for a growing number of judges in recent decades. As a matter of fact, over the last decade, only $19\%$ of the new administrative judges did not exercise as civil servants in the past.[18] This means that $81\%$ of the new administrative judges used to work with state officials and local authorities, i.e. the parties they may have to judge. This situation is favorable to the emergence of sympathy towards a group (the group of public agents) to whom administrative judges used to belong to. Such a context can potentially give rise to a pro-defendant bias.

However, since judges from the *Conseil d'État* are career judges who have never had professional relationships with public agents, for most of them, such a bias is unlikely.[19] A natural way for these judges to correct a possible pro-defendant bias from administrative judges is to adopt a pro-plaintiff behavior. A pro-plaintiff bias in the *Conseil d'État* would then be interpreted as corrective behavior with respect to some failings of lower administrative tribunals.

[17] See the statistics provided by the *Cour de cassation* on its website:
http://www.courdecassation.fr/IMG/File/pdf_2007/10-05-2007/10-05-2007_mcKee_fr.pdf.

[18] See the statistics provided by the *Cour de cassation* on its website:
http://www.courdecassation.fr/IMG/File/pdf_2007/10-05-2007/10-05-2007_recrutement_adm.pdf.

[19] A few words on how people get to be members of the *Conseil d'État* may be useful at this point. Each year, five positions of auditors (*Auditeurs*) are made available to the top graduates of the National School of Administration. After four years, an auditor is promoted to master of petitions (*Maître des requêtes*) and after twelve years, to the level of judge (*Conseiller d'État*). Promotion is based exclusively on seniority which assures independence and impartiality in the promotion of members. Recruitment by external appointment accounts for one out of four masters of petitions and one out of three judges. A number of external appointments, upon the nomination of the Vice-President of the *Conseil d'État*, is reserved for members of the administrative tribunals and the administrative appellate courts. See the website of the *Conseil d'État*: http://english.conseil-etat.fr/.

# 3 The Database

To observe whether judges treat plaintiffs and defendants differently, we study the entire set of decisions of the *Cour de cassation* and *Conseil d'État* about environmental accidents and damage between 1956 and 2010. Our database is constructed from two French official legal search engines that list all cases before the *Cour de cassation* and the *Conseil d'État* since 1956. To collect the entire set of environmental cases we used the following keywords: pollution, nuisance to neighborhood (*trouble de voisinage*), environmental damage, environmental risk, environmental harm, ecological risk, ecological harm, ICPE, Seveso, IPPC,[20] and risk prevention. We obtained 614 different cases. In the following subsections, we present the variables of interest and a set of control variables. All the variables are dummy variables noted "1" when present in cases and "0" otherwise.

## 3.1 Dependent variables: judges' decisions

We focus on three dependent variables to observe whether judges have a pro-plaintiff bias and to compare administrative and civil judges in terms of severity. The first is "pro-defendant decisions" (*Prodef*), noted 1 when judges rule in favor of the defendant and 0 otherwise. The second is "reversal decisions" (*Reverse*), noted 1 when judges reverse the decision of the lower court and 0 otherwise.[21] Finally, the third variable to be tested is "referral decisions" (*Refer*), and is noted 1 when judges from either the *Cour de cassation* or the *Conseil d'État* send the case back to the lower court.[22]

## 3.2 Explanatory variables

For each set of regressions, we observe the impact of two explanatory variables: *Defendant appeal* and *Conseil d'État*. *Defendant appeal* is noted 1 when the defendant appeals the decision of the lower court and 0 when the plaintiff appeals.[23] This variable helps determine whether judges'

[20] For *Integrated Pollution Prevention and Control*. See European Directive EC 96/61 imposing the application of the "Best Available Technology" principle to polluting facilities.

[21] Cases in which judges partly reverse lower courts' decisions are noted 1.

[22] Referral decisions are more likely to occur when judges decided first to reverse, partly reverse or partly confirm lower courts decisions. Econometrically, this implies that the set of regressions concerning referral decisions may suffer from endogeneity. Though, our database does not allow us to define any instrument variable to deal with such endogeneity problems. Consequently, results from this set of regressions must be interpreted with caution.

[23] In our database, there is only one appellant in each case.

decisions differ when the identity of the appellant changes. More precisely, if judges' decisions to reverse the ruling of a lower court are negatively correlated with this variable, we would interpret it as evidence of a pro-plaintiff bias.[24] This hypothesis *(H1)* is the first to be tested.

The most important variable of interest is "*Conseil d'État*". It is noted 1 when the final appeal is reviewed by the *Conseil d'État* and 0 when reviewed by the *Cour de cassation*. This variable helps determine whether being judged by the *Conseil d'État* instead of the *Cour de cassation* is likely to change the result of litigation, all other things being equal. First, if the chances of a pro-defendant (*resp. pro-plaintiff*) outcome are lower (*higher*) in the *Conseil d'État* than in the *Cour de cassation*, this implies that the *Conseil d'État* has a pro-plaintiff bias. We would interpret this result as the willingness of judges from the *Conseil d'État* to correct a pro-defendant bias of administrative tribunals *(H2)*. Likewise, if the *Conseil d'État* is less likely to refer cases back to lower courts than the *Cour de cassation*, this would imply that judges from the *Conseil d'État* are less confident in the capacity of lower courts to correctly adjudicate cases. Again, this would be interpreted as further evidence of the existence of a pro-defendant bias in lower courts *(H3)*.

We can summarize our main hypotheses to be tested as follows:

*H1*. Appeal by the defendant decreases the probability of a reversal. Judges from the *Conseil d'État* and the *Cour de cassation* have a pro-plaintiff bias.

*H2*. The probability of a pro-defendant outcome is lower in the *Conseil d'État*. Judges from the *Conseil d'État* tend to be "pro-plaintiff" to correct the pro-defendant bias of administrative tribunals' judges.

*H3*. The probability of a referral decision is lower in the *Conseil d'État*. Judges from the *Conseil d'État* are more likely to enter definitive rulings than judges from the *Cour de cassation* as they consider that administrative judges from lower courts are biased.

### 3.3 Control variables

Environmental lawsuits may be brought for different reasons and may involve different natural assets. To cope with this heterogeneity and its potential influence over the correlation we want to observe, we control several aspects of an environmental lawsuit: *(i)* did the defendant com-

[24] Remember that a defendant in our database is always a firm that created losses and that her status cannot change - i.e., she cannot become a plaintiff - when going from Appellate to Supreme Court.

ply with regulatory norms and standards? *(ii)* Which legal grounds have been invoked by the appellant? *(iii)* Which natural assets have been damaged?

i) *Compliance* with regulation is a dummy variable, noted 1 if the defendant complied with regulations and 0 otherwise.

ii) Legal grounds describe the legal basis used by the appellant to get her case to the *Conseil d'État* or *Cour de cassation*. In our database, we observed five different legal grounds: disagreement on the amount of compensation (which we take as our reference variable), disagreement on the relevance of the proof of wrongful or negligent behavior (*Proof*), disagreement with lower court's treatment of causation (*Causality*), disagreement with lower court's treatment of the uncertainty about the consequences - in the case of a lawsuit primarily brought by potential victims claiming that a given activity imposes an imminent risk of accident - (*Uncertainty*), and disagreement on the due process of law or on the legal procedure followed by the lower court (*Procedure*).

iii) Natural assets are classified as follows: water (reference variable), soil, air, sea, and noise.

Finally, some private firms may be entitled to provide public services (see Section 2). In this case, they are either subject to civil law if they provide a public service but do not exercise any administrative authority, or to administrative law if they provide a public service and exercise an administrative authority (*mission de service public avec prérogatives de puissance publique*). Given the nature of their activity, these firms may be more likely to influence lower courts' judges. Consequently the variable *Public service* is used to observe whether both the *Conseil d'État* and *Cour de cassation* are harsher when dealing with these private firms. Should this be the case, we would interpret this result as evidence that both civil courts and administrative tribunals tend to favor defendants who are connected with the government. In other words, this variable helps control for a potential pro-plaintiff bias due to the nature of the defendant's activity. Our hypothesis is that this variable should not have any significant influence if judges from lower administrative tribunals have a pro-defendant bias, but not judges from lower civil courts. Indeed, if only the lower administrative tribunals favor the private firms which provide public services, then they may treat them exactly as they treat other defendants, and this variable should not be significant. However, if lower civil courts also favor this type of firms, then the *Public service* variable may be significant in the *Cour de cassation*.

# 4 Results

Table 1 reports the number of cases dealt with in the *Cour de cassation* and the *Conseil d'État*, distinguishing appeals initiated by the plaintiff and defendant.

| | *Cassation* | *Conseil d'État* | Total |
|---|---|---|---|
| Plaintiff appeal | 187 (30.45%) | 37 (6.03%) | 224 (36.48%) |
| Defendant appeal | 303 (49.35%) | 87 (14.17%) | 390 (63.52%) |
| Total | 490 (79.80%) | 124 (20.20%) | 614 |

Table 1: Appeals

We observe that defendants appeal more often than plaintiffs in both courts (two thirds of the total number of appeals). This could constitute a bias to be taken into account in the regressions below. Indeed, it may be that defendants file for an appeal even when their chances of winning are less than one half. Therefore, we should be careful when interpreting the coefficient of the *Defendant appeal* variable.

The *Conseil d'État* deals with far fewer cases than the *Cour de cassation*, since it only reviews about $20\%$ of cases. However, no structural difference in the distribution of the cases between appeals by plaintiffs and by defendants, or in the nature of the cases treated by both courts arises from simple observation. This is confirmed by two-sample t-tests for equal variance and mean on different variables.[25]

A pro-defendant bias in the lower courts, as long as it is perceived as such by judges from the Supreme Courts, should give rise to a correction mechanism, that would be translated into pro-plaintiff bias *(H1)* in the appeal outcome (see Shavell, 1995). Then, we should expect more reversal decisions favorable to plaintiffs, and this effect should be stronger for cases dealt with by the *Conseil d'État* rather than by the *Cour de cassation (H2)*. Last, the decision of upper courts not to fully review a case but to send it back to the lower court is indicative of trust in the capacity of the latter to deal properly with it. We thus also look at referral decisions by appellate courts, the premises being that the *Conseil d'État* should be more reluctant than the *Cour de cassation* to send a case back if administrative tribunals are suspected of favoring the government as a litigant *(H3)*.

[25]The two-sample t-test is a traditional Fisher test comparing the variance and mean of same variables of two populations. To confirm that the nature of cases is similar in both samples, we compare the cases according to their legal characteristics: legal grounds invoked by appellant, natural assets damaged, and compliance with regulation. The results of the two-sample t-tests are given in Appendix A.

In analyzing the results, we proceed as follows. We first report the estimations explaining the pro-defendant and reversal decisions. We then study decisions to refer cases back to lower courts.

### 4.1 Pro-defendant and reversal decisions

Pro-defendant and reversal decisions can be linked in a structural though non observable way. For this reason, we run bivariate Probit regressions explaining simultaneously the two variables. Indeed, these two variables are significantly correlated, confirming that we must rely on a bivariate approach and not run separate regressions. Table 3 reports the results of our basic regressions.

■ **Pro-defendant decisions.** Let us start by analyzing the results regarding the pro-defendant decisions (the left column for each model in Table 3). Coefficients reflect the marginal variation in the chances of obtaining a pro-defendant decision with respect to a benchmark in which the plaintiff initiates the appeal in the *Cour de cassation* to obtain compensation for environmental harm caused by a defendant who failed to comply with the regulatory standards, who did not have any public service mission and who deteriorated some water resource.

First, both courts tend to confirm the decisions adopted by the lower courts (trial and appeal courts, and tribunals). This can be seen from the negative and strongly significant coefficients of the *Defendant appeal* variable in all three models. Indeed, a defendant who appeals has $29\%$ fewer chances of obtaining a pro-defendant outcome than a plaintiff who appeals.[26] This confirms the strong tendency of appellate courts to uphold lower-court decisions as shown by Eisenberg and Heise (2009), and particularly by Eisenberg, Fisher, and Rosen-Zvi (2011).[27]

Second, asymmetric treatment of defendants by the two courts is revealed by the negative and

[26]The coefficient of *Defendant appeal* measures the probability $Pr$(Pro-defendant|Defendant appeal) of *Pro-defendant* variable taking the value 1 when the value of *Defendant appeal* changes from 0 to 1. Recall, though, that *Defendant appeal* is a binary variable noted 1 if the defendant appeals and 0 otherwise, i.e. if the plaintiff appeals, and that *Pro-defendant* is also a binary variable noted 1 if the decision is pro-defendant and 0 otherwise, i.e. if the decision is pro-plaintiff. Thus observing the chances of *Pro-defendant* taking the value 1 when *Defendant appeal* goes from 0 to 1 is equivalent to measuring the chances of *Pro-defendant* going from 1 to 0 when *Defendant appeal* goes from 1 to 0, which is the probability $Pr$(Pro-plaintiff|Plaintiff appeal) of a pro-plaintiff outcome when the plaintiff appeals. Consequently, the coefficient of *Defendant appeal* which measures the correlation between *Defendant appeal* and *Pro-defendant* also measures the correlation between *Plaintiff appeal* and *Pro-plaintiff*. With an affirmative behavior, the chances of the appellant obtaining a positive outcome, being either the plaintiff or the defendant, are always lower than the chances of the respondent doing so. This is why we describe the result as *affirmative behaviour*.

[27]The affirmance rate in Eisenberg et al. (2011) in both civil and criminal cases is about $70\%$, similar to the figure usually obtained in mandatory courts and tribunals.

significant coefficient of the *Conseil d'État* variable. Indeed a defendant has $11\%$ less chances of obtaining a favorable decision when the appeal takes place in the *Conseil d'État* rather than in the *Cour de cassation*. Defendants are thus treated differently depending on the court which is in charge. This result strongly contradicts Amaral-Garcia and Garoupa (2012), since they do not obtain any difference in the treatment of defendants between the civil and the administrative sections of the Spanish Supreme Court. Given the outcome of our two-sample t-tests for equal variance and mean, our finding cannot be related to any structural difference between cases that our data do not allow us to observe, but rather come from greater severity of the *Conseil d'État* with respect to defendants.

Third, compliance with the regulation significantly increases the defendant's chances of a favorable decision in both courts. This could be interpreted as the existence of a "defense for compliance with regulation", but one should be careful as this defense tends to be less often accepted by judges as time goes by (see Bentata 2014).

■ **Reversal decisions.** Coefficients in the right column of each model in Table 3 reflect the marginal variation in the chances of obtaining a reversal decision with respect to a benchmark in which the plaintiff initiates the appeal in the *Cour de cassation* to obtain compensation for environmental harm caused by a defendant who failed to comply with the regulatory standards, who did not have any public service mission and who deteriorated some water resource. We can see that an appeal from a defendant reduces the chances of obtaining a reversal decision. An appeal by a defendant reduces the chances of obtaining a reversal by $16\%$ when compared with an appeal by a plaintiff. We have already seen that appeal courts tend to uphold lower court's decisions and, when they reverse it, they tend to favor the plaintiff. This could be interpreted as a pro-plaintiff bias but one must be careful: it could just reflect the fact that defendants go to appellate courts more easily than plaintiffs, maybe even when their chances of winning are quite low (see the earlier comment on Table 1).

The chances of a reversal decision are $14\%$ lower in the *Conseil d'État* than in the *Cour de cassation*. It thus seems that the *Conseil d'État* is more affirmative than the Civil one. This tendency to uphold the administrative tribunals' decisions depends on the identity of the litigant filing the appeal. Indeed, when we interact the *Defendant appeal* variable with the *Conseil d'État* variable, we see that a defendant appealing before the *Conseil d'État* has $26\%$ fewer chances of obtaining

a reversal decision than if it was a plaintiff who appealed (see Table 4). Therefore, the *Conseil d'État* is more reluctant to reverse a decision than the *Cour de cassation* and, as shown in the *Pro-defendant* regressions, when it reverses it, it is more favorable to plaintiffs. Indeed, a defendant appealing in the *Conseil d'État* has half the chance of obtaining a reversal decision as in the *Cour de cassation* (see the elasticity of -0.12 for the *Defendant appeal* variable and the elasticity of -0.26 for the interaction term *Defendant appeal*Conseil d'État* in Table 4).

Overall, the observation of pro-defendant and reversal decisions points to the same conclusion: there is a difference in the treatment of litigants between the two upper courts. We summarize our results so far as follows.

**Result 1 :** *French upper courts tend to affirm lower courts' decisions. When they reverse them, they tend to favor the plaintiffs. This severity with defendants is greater in the Conseil d'État than the Cour de cassation.*

### 4.2 Referral decisions

We provide a fresh insight into the decisions in upper courts by looking at their referral decisions to lower courts. Their frequency can be considered as a proxy for the degree of trust of Supreme Courts towards lower courts on their capacity of reviewing a case. In our regression, if the coefficient for the *Conseil d'État* variable is not significant, this would mean that both courts behave the same way regarding referral decisions. However, if significant, then this would suggest a difference between both courts in their trust toward lower courts and tribunals, a negative coefficient indicating a lower degree of trust or the willingness to have a definitive decision on the case. Whatever the underlying reason, a negative coefficient could indicate that the *Conseil d'État* adopts a corrective behavior with respect to the administrative tribunals.

From Table 5, we can see that the *Conseil d'État* variable is significant, and negatively correlated with referral decisions: a case presents $9\%$ fewer chances of being referred back from the *Conseil d'État* than from the *Cour de cassation*.

The *Public service* variable is also significant. The chances of a referral decision for a private firm providing public services are $15\%$ lower than for ordinary private-sector firms. It seems that upper courts are more reluctant to send these precise cases back to lower courts, despite the

fact that the *Public service* variable is not correlated to pro-defendant and reversal decisions (see Table 3).

**Result 2 :** *The Conseil d'État is more reluctant than the Cour de cassation to send the cases back to lower courts.*

**Result 3 :** *Overall, the two French Supreme Courts behave differently. The pro-plaintiff bias of the Conseil d'État could be indicative of a bias of the administrative tribunals in favor of public utilities and/or the government.*

# 5 Conclusions

This paper is a contribution to the empirical literature on courts' decisions, based on an original dataset of all French environmental cases brought before the supreme instances. Regressions have shown clear-cut results: upper courts tend to uphold lower courts' decisions and, when they reverse them, they tend to favor the plaintiffs. The *Conseil d'État* is harsher with defendants than the *Cour de cassation*. In addition, the former is more reluctant than the latter to refer the cases back to lower courts. This behavior of the *Conseil d'État* could be indicative of a bias of the administrative tribunals towards defendants, meaning public utilities and/or the government. In this respect, our main findings contradict a series of results obtained earlier in the literature, where either no difference could be detected in the treatment of the government and private parties as litigants, or the government received favorable treatment.

The limitation on our analysis is obviously the fact that there could be a selection effect at work. However, not having the history of the cases in the lower courts and even before trial, we cannot control for it.

This analysis has been conducted for environmental cases, and it would be interesting to extend it to other categories of cases. We keep this task for further work.

# 6 References


Amaral-Garcia S. and N. Garoupa, (2012), Do Administrative Courts Favor the Government? Evidence from Medical Malpractice in Spain, *7th Annual Conference on Empirical Legal Studies Paper*.

Ashenfelter O., Eisenberg T. and S.J. Schwab, (1995), Politics and the Judiciary, *Journal of Legal Studies*, 24, 257-281.

Bentata P., (2013), Environmental Regulation and Civil Liability under Causal Uncertainty: An Empirical Study of the French Legal System, *Review of Law and Economics*, 9(2):239-263.

Bentata P., (2014), Liability as a Complement to Environmental Regulation: An Empirical Study of The French Legal System, *Environmental Economics and Policy Studies*, 16(3): 201-228, July.

Bogoch B. and R. Don-Yechiya, (1999), The Gender of Justice: Bias Against Women in Israeli Supreme Courts, Jerusalem Institute for Israel Studies (Hebrew).

Boré L., (2011), La Cassation, voie d'achèvement des procès ?, *Cour de Cassation*, 24 Janvier.

Choi S.J. and Gulati M.G., (2008), Bias in Judicial Citations: A Window into the Behavior of Judges?, *Journal of Legal Studies*, 37(1): 87-129.

Choi S.J., Gulati M., Holman M. and E.A. Posner et al., (2011), Judging Women, *Journal of Empirical Legal Studies*, 8(3): 504-532.

Clermont K.M. and T. Eisenberg, (1992), Trial by Jury or Judge: Transcending Empiricism, *Cornell Law Review*, 77, 1135-1136.

Clermont K.M. and T. Eisenberg, (2000), Anti-Plaintiff Bias in the Federal Appellate Courts, *Judicature*, 24(3): 128-134.

Clermont K.M. and T. Eisenberg, (2001), Appeal from Jury or Judge Trial: Defendants' Advantage, *American Law and Economics Review*, 3(1): 125-164.

Clermont K.M. and T. Eisenberg, (2002), Plaintiphobia in the Appellate Courts: Civil Rights really Do Differ from Negotiable Instruments, *University of Illinois Law Review*, 947-977.

Eisenberg T., (1991), The Relationship between Plaintiff Success Rates before Trial and at Trial, *Journal of the Royal Statistical Society*, 154(1), Series A, 111-116.

Eisenberg T., (2004), Appeal Rates and Outcomes in Tried and Nontried Cases: Further Exploration of Anti-Plaintiff Appellate Outcomes, *Journal of Empirical Legal Studies*, 1(3), 659-688.

Eisenberg T. and H.S. Farber, (1997), The Litigious Plaintiff Hypothesis: Case Selection and Resolution, *The RAND Journal of Economics*, 28(0) S92-S112.

Eisenberg T. and H.S. Farber, (2003), The Government as Litigant: Further Tests of the Case Selection Model, *American Law and Economics Review*, 5(1): 94-133.

Eisenberg T. and H.S. Farber, (2013), Why do Plaintiffs Lose Appeals? Biased Trial Courts, Litigious Losers, or Low Trial Win Rates, *American Law and Economics Review*, 15(1):73-109.

Eisenberg T., Fisher T. and I. Rosen-Zvi, (2011), Israel's Supreme Court Appellate Jurisdiction: An Empirical Study, *Cornell Law Review*, 96: 693-725.

Eisenberg T. and Heise, (2009), Plaintiphobia in State Courts? An Empirical Study of State Courts Trials on Appeal, *Journal of Legal Studies*, 38: 121-137.

Frydman P., (2008), Administrative Justice in France, $11^{th}$ *AIJA Tribunals Conference*, Queensland, Australia, 5-6 June.

Gazal-Ayal O. and R. Sulitzeanu-Kenan, (2010), Let My People Go: Ethnic In-Group Bias in Judicial Decisions - Evidence from a Randomized Natural Experiment, *Journal of Empirical Legal Studies*, 7(3): 403-428.

Greiner J.D. and D.B. Rubin, (2011), Causal Effects of Perceived Immutable Characteristics, *The Review of Economics and Statistics*, 93(3): 775-785.

Gennaioli N., (2013), Optimal Contracts with Enforcement Risk, *Journal of the European Economic Association*, 11(1): 59-82.

Gennaioli N. and S. Rossi, (2010), Judicial Discretion in Corporate Bankruptcy, *The Review of Financial Studies*, 23(11): 4078-4114.

Hall M., (2010), Randomness Reconsidered: Modeling Random Judicial Assignment in the U.S. Courts of Appeals, *Journal of Empirical Legal Studies*, 7(3): 574-589.

Hosmer D.W., S. Lemeshow and R.X. Sturdivant, (2013), *Applied Logistic Regression, Third Edition*, Wiley, Inc., New York.

Ichino A., Polo M. and E. Rettore, (2003), Are Judges Biased by Labor Market Conditions?, *European Economic Review*, 47: 913-944.

Lambert Mogiliansky A., Sonin K. and E. Zhuravskaya, (2007), Are Russian Commercial Courts Biased? Evidence from a Bankruptcy Law Transplant, *Journal of Comparative Economics*, 35(2): 254-277, June.

Marinescu I., (2011), Are Judges Sensitive to Economic Conditions? Evidence from U.K. Employment Tribunals, *Industrial and Labor Relations Review*, 64(4): 673-698.

Miceli T.J., (2009), Legal Change: Selective Litigation, Judicial Bias, and Precedent, *Journal of Legal Studies*, 38(1): 157-168.

Miceli T.J., (2010), Legal Change and the Social Value of Lawsuits, *International Review of Law and Economics*, 30(3): 203-208.

Peng C.-Y., Lee K.L. and G.M. Ingersoll, (2002), An Introduction to Logistic Regression Analysis and Reporting, *The Journal of Educational Research*, 96(1): 1-13.

Priest G.L. and B. Klein, (1984), The Selection of Disputes for Litigation, *Journal of Legal Studies*, 13: 1-55.

Shavell, S., (1995), The Appeals Process as a Means of Error Correction, *Journal of Legal Studies*, 24: 379-426.

Waldfogel J., (1995), The Selection Hypothesis and the Relationship between Trial and Plaintiff Victory, *Journal of Political Economy*, 103: 229-259.

# Appendix A.

**■ Two-sample t-tests for equal variance and mean.**

These tests measure the difference of variance and mean for different variables for two samples, namely the *Cour de cassation* and the *Conseil d'État*. The null hypothesis ($H_0$) is that both samples have similar variance and mean. In Table 2, *p-values* are beyond the critical threshold of 0.1 for each control variable, except *Procedure* and *Sea* which account for only 16 and 5 cases respectively. Therefore, as far as control variables are concerned, $H_0$ cannot be rejected, meaning that

| | t | p-value |
|---|---|---|
| Defendant appeal | 2.1019 | 0.0360 |
| Pro-defendant decision | -1.7216 | 0.0856 |
| Reversal decision | 1.9062 | 0.0571 |
| Referral decision | 2.8391 | 0.0047 |
| Public service | -0.1161 | 0.9076 |
| Compensation | 0.5530 | 0.5804 |
| Compliance | -0.0308 | 0.9754 |
| Proof | 0.0293 | 0.9767 |
| Causality | 1.2773 | 0.2020 |
| Uncertainty | -0.9135 | 0.3613 |
| Procedure | -1.9723 | 0.0950 |
| Water | -0.5533 | 0.5803 |
| Soil | -0.0045 | 0.9964 |
| Air | -1.1472 | 0.2518 |
| Sea | 1.7944 | 0.0732 |
| Noise | 1.2177 | 0.2238 |

Table 2: Two-sample t-tests

there is no structural difference on the corresponding variables between the two samples. On the other hand, the three dependent variables and the *Defendant appeal* variable have significantly different mean and variance in each sample. Consequently, we can conclude that for similar cases, the *Conseil d'État* and the *Cour de cassation* rule differently.

Table 3: Bivariate Probit model

| | Restricted model (1) | | Restricted model (2) | | Complete model | | Elasticities | |
|---|---|---|---|---|---|---|---|---|
| | Prodef | Reverse | Prodef | Reverse | Prodef | Reverse | Prodef | Reverse |
| Defendant appeal | -1.099*** | -0.637*** | -1.100*** | -0.619*** | -1.099*** | -0.602*** | -0.29 | -0.16 |
| | (0.123) | (0.126) | (0.129) | (0.130) | (0.132) | (0.132) | | |
| *Conseil d'État* | -0.398** | -0.525*** | -0.443*** | -0.542*** | -0.426** | -0.537*** | -0.11 | -0.14 |
| | (0.165) | (0.175) | (0.169) | (0.176) | (0.171) | (0.178) | | |
| Public service | 0.159 | 0.333 | 0.134 | 0.278 | 0.145 | 0.236 | | |
| | (0.406) | (0.383) | (0.418) | (0.385) | (0.422) | (0.386) | | |
| Compliance | 0.820*** | 0.231* | 0.841*** | 0.274** | 0.850*** | 0.268* | 0.23 | 0.07 |
| | (0.131) | (0.131) | (0.136) | (0.135) | (0.138) | (0.137) | | |
| Proof | | | -0.235 | -0.116 | -0.265 | -0.116 | | |
| | | | (0.191) | (0.188) | (0.194) | (0.191) | | |
| Causality | | | -0.345* | -0.453** | -0.296 | -0.470** | | -0.12 |
| | | | (0.204) | (0.208) | (0.208) | (0.211) | | |
| Uncertainty | | | 0.326 | -0.0441 | 0.316 | -0.0687 | | |
| | | | (0.226) | (0.231) | (0.230) | (0.237) | | |
| Procedure | | | -0.351* | -0.157 | -0.338* | -0.171 | -0.08 | |
| | | | (0.202) | (0.198) | (0.204) | (0.201) | | |
| Soil | | | | | -0.0555 | -0.0948 | | |
| | | | | | (0.190) | (0.187) | | |
| Air | | | | | -0.178 | -0.401* | | |
| | | | | | (0.200) | (0.207) | | |
| Sea | | | | | 0.539 | -0.432 | | |
| | | | | | (0.388) | (0.382) | | |
| Noise | | | | | -0.176 | -0.0317 | | |
| | | | | | (0.165) | (0.168) | | |
| Constant | -5.426 | 5.991 | -5.080 | 6.443 | -5.130 | 6.457 | | |
| | (1.068) | (5.095) | (1.068) | (5.095) | (1.068) | (5.042) | | |
| Athrho | 0.171** | | 0.159** | | 0.163** | | | |
| | (0.0758) | | (0.0768) | | (0.0774) | | | |
| Log-likelihood | -600.703 | | -590.877 | | -586.332 | | | |
| Wald chi2 | 221.29 | | 213.44 | | 237.40 | | | |
| McFadden R2 | 0.195 | | 0.208 | | 0.215 | | | |
| Rho | 0.291 | | 0.1805 | | 0.1820 | | | |
| | (0.0094) | | (0.0156) | | (0.0156) | | | |

Note. Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include a years fixed effect.

Table 4: Bivariate Probit model with interaction variable

| | Restricted model (1) | | Restricted model (2) | | Complete model | | Elasticities | |
|---|---|---|---|---|---|---|---|---|
| | Prodef | Reverse | Prodef | Reverse | Prodef | Reverse | Prodef | Reverse |
| Defendant appeal | -0.959*** | -0.499*** | -0.954*** | -0.474*** | -0.956*** | -0.458*** | -0.25 | -0.12 |
| | (0.131) | (0.133) | (0.136) | (0.137) | (0.139) | (0.140) | | |
| Conseil d'État (CE) | 0.0837 | -0.0681 | 0.0475 | -0.0640 | 0.0511 | -0.0666 | | |
| | (0.232) | (0.231) | (0.235) | (0.234) | (0.237) | (0.236) | | |
| Defendant appeal * CE | -0.963*** | -0.966*** | -1.001*** | -0.999*** | -0.975*** | -0.990*** | -0.26 | -0.26 |
| | (0.317) | (0.328) | (0.324) | (0.328) | (0.327) | (0.330) | | |
| Public service | 0.108 | 0.283 | 0.0800 | 0.223 | 0.975 | 0.182 | | |
| | (0.412) | (0.381) | (0.425) | (0.383) | (0.428) | (0.384) | | |
| Compliance | 0.854*** | 0.254* | 0.882*** | 0.300** | 0.887*** | 0.295** | 0.23 | 0.08 |
| | (0.133) | (0.133) | (0.138) | (0.136) | (0.140) | (0.138) | | |
| Proof | | | -0.251 | -0.125 | -0.276 | -0.125 | | |
| | | | (0.193) | (0.190) | (0.196) | (0.193) | | |
| Causality | | | -0.387* | -0.484** | -0.339 | -0.501** | | -0.13 |
| | | | (0.206) | (0.209) | (0.210) | (0.212) | | |
| Uncertainty | | | 0.300 | -0.0583 | 0.291 | -0.0807 | | |
| | | | (0.227) | (0.234) | (0.231) | (0.239) | | |
| Procedure | | | -0.375* | -0.170 | -0.361* | -0.184 | -0.09 | |
| | | | (0.205) | (0.201) | (0.206) | (0.203) | | |
| Soil | | | | | -0.0627 | -0.0962 | | |
| | | | | | (0.192) | (0.189) | | |
| Air | | | | | -0.139 | -0.383* | | |
| | | | | | (0.203) | (0.209) | | |
| Sea | | | | | 0.506 | -0.453 | | |
| | | | | | (0.389) | (0.383) | | |
| Noise | | | | | -0.168 | -0.0330 | | |
| | | | | | (0.167) | (0.169) | | |
| Constant | -5.426 | 5.987 | -5.279 | 6.647 | -5.327 | 6.665 | | |
| | (1.068) | (5.042) | (2.035) | (8.503) | (2.035) | (8.503) | | |
| Athrho | 0.171** | | 0.159** | | 0.163** | | | |
| | (0.0758) | | (0.0768) | | (0.0774) | | | |
| Observations | 614 | 614 | 614 | 614 | 614 | 614 | | |

Note. Standard errors in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include a years fixed effect.

Table 5: Logit/Probit models of referral decisions

| | Restricted model (1) | | Restricted model (2) | | Complete model | | Elasticities | |
|---|---|---|---|---|---|---|---|---|
| | Logit | Probit | Logit | Probit | Logit | Probit | Restricted (1) | Complete |
| Defendant appeal | -0.697* | -0.395* | -0.569 | -0.320 | -0.513 | -0.286 | -0.05 | |
| | (0.380) | (0.206) | (0.399) | (0.217) | (0.410) | (0.225) | | |
| Conseil d'État (CE) | -1.307** | -0.704** | -1.127* | -0.604* | -1.393** | -0.764** | -0.09 | -0.09 |
| | (0.615) | (0.342) | (0.649) | (0.349) | (0.695) | (0.371) | | |
| Reverse | 4.617*** | 2.499*** | 4.709*** | 2.560*** | 4.876*** | 2.699*** | 0.31 | 0.30 |
| | (0.492) | (0.238) | (0.500) | (0.243) | (0.532) | (0.268) | | |
| Public service | -2.378* | -1.416* | -2.444* | -1.435* | -2.700* | -1.530** | -0.15 | -0.16 |
| | (1.308) | (0.740) | (1.365) | (0.771) | (1.457) | (0.765) | | |
| Compliance | -0.120 | -0.0445 | 0.100 | 0.0655 | 0.0413 | 0.0512 | | |
| | (0.405) | (0.220) | (0.426) | (0.229) | (0.444) | (0.239) | | |
| Proof | | | 0.920 | 0.0556 | 0.0177 | 0.118 | | |
| | | | (0.556) | (0.299) | (0.573) | (0.314) | | |
| Causality | | | -0.345 | -0.188 | -0.405 | -0.224 | | |
| | | | (0.662) | (0.360) | (0.694) | (0.386) | | |
| Uncertainty | | | -1.656** | -0.969** | -1.540* | -0.900** | | -0.09 |
| | | | (0.761) | (0.432) | (0.794) | (0.453) | | |
| Procedure | | | -0.169 | -0.0779 | -0.225 | -0.0978 | | |
| | | | (0.579) | (0.317) | (0.592) | (0.328) | | |
| Soil | | | | | 0.734 | 0.449 | | |
| | | | | | (0.578) | (0.304) | | |
| Air | | | | | -0.0522 | -0.0659 | | |
| | | | | | (0.724) | (0.392) | | |
| Sea | | | | | -2.992** | -1.773** | | |
| | | | | | (1.474) | (0.826) | | |
| Noise | | | | | 0.540 | 0.306 | | |
| | | | | | (0.558) | (0.310) | | |
| Constant | -4.901*** | -2.694*** | -5.122*** | -2.837*** | -5.516*** | -3.149*** | | |
| | (0.902) | (0.503) | (0.986) | (0.554) | (1.066) | (0.616) | | |
| Observations | 614 | 614 | 614 | 614 | 614 | 614 | | |
| LR test | 232.271 | 222.932 | 230.637 | 230.923 | 238.604 | 240.444 | | |
| Hosmer-Lemeshow test | 4.58 | 5.82 | 3.68 | 2.76 | 4.18 | 2.95 | | |
| | (0.8015) | (0.6669) | (0.8846) | (0.9482) | (0.8404) | (0.9374) | | |
| McFadden R2 | 0.509 | 0.509 | 0.526 | 0.527 | 0.544 | 0.549 | | |
| Cox-Snell R2 | 0.368 | 0.367 | 0.377 | 0.378 | 0.387 | 0.390 | | |
| C-stat | 90.97 | 90.76 | 92.20 | 91.38 | 92.20 | 91.38 | | |

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses. (1) We provide tests considered as fundamental and sufficient by Peng, Lee and Ingersoll (2002). (2) C-statistic measures the model's ability to correctly classify the actual value of *Refer*. For the first column, it means that the model assigned the correct actual outcome in $90.97\%$ of all trials.

## Appendix B - For the convenience of the referees, not for publication

We first start by running separate regressions for the *Conseil d'État* and for the *Cour de cassation* explaining pro-defendant decisions (Table 6) and reversal decisions (Table 7). We use a Logit model since regressed variables are binary. Both Tables 6 and 7 report marginal effects with respect to a benchmark situation.

In Table 6, coefficients reflect the marginal variation in the chances of obtaining a pro-defendant decision with respect to a benchmark in which the plaintiff initiates the appeal in the *Cour de cassation* to obtain compensation for an environmental harm caused by a defendant who did not comply with the regulatory standards, who did not have any public service mission and who deteriorated some water resource.

Whatever the court, the mere action of filing an appeal for a defendant strongly reduces its probability of obtaining a favorable decision. A defendant files an appeal in order to invalidate a lower court's decision. Hence, an upper court wishing in general to confirm lower courts' decisions will take a decision that goes counter the appealing defendant.

*Remark 1.* One should be cautious in interpreting directly this first result as indicating a pro-plaintiff behavior. Indeed, the *Defendant appeal* and *Plaintiff appeal* variables are symmetric - one takes value 1 when the other takes value 0 - and the same for the *Pro-defendant* and *Pro-plaintiff* variables. Therefore, we would have found the same coefficient and elasticity if we regressed pro-plaintiff decisions by plaintiff appeal: the probability of obtaining a pro-defendant decision when the defendant files the appeal is $26\%$ lower than when the plaintiff files the appeal, but the probability of obtaining a pro-plaintiff decision when the plaintiff files the appeal is also $26\%$ lower than when the defendant files the appeal. The negative coefficient of the *Defendant appeal* variable just demonstrates some affirmance attitude from upper courts, which are quite prone to confirm lower courts' outcomes.

In Table 7, coefficients reflect the marginal variation in the chances of obtaining a reversal decision with respect to a benchmark in which the plaintiff files the appeal in the *Cour de cassation* to obtain compensation for an environmental harm caused by a defendant who did not comply with the regulatory standards, who did not have any public service mission and who deteriorated some water resource.

The coefficient of the *Defendant appeal* variable is negative and significant, here too. The probability of obtaining a reversal decision is lower for a defendant who files an appeal than for a plaintiff who files an appeal.

Overall, Tables 6 and 7 thus show that upper courts tend to confirm lower courts' decisions and, when they reverse it, they tend to favor the plaintiffs.

*Remark 2.* The coefficient of the *Defendant appeal* variable is three times larger in the *Conseil d'État* than in the *Cour de cassation*. This could suggest a stronger severity from the former than from the latter. This remains to be confirmed by appropriate regressions later.

In our analysis, the central explicative variable is the *Conseil d'État*. It is sometimes necessary to interact variables to give strength to some conclusions. As said in *Remark 1* above, the negative coefficient of the *Defendant appeal* variable does not allow, in itself, to conclude on a pro-plaintiff behavior of the *Conseil d'État* in Table 6. But, in a model explaining the reversal decisions, a variable interacting the *Conseil d'État (CE)* with the *Defendant appeal* would allow to determine whether there is a difference of treatment for defendants between the two courts. This interaction variable is thus introduced in Tables 8 and 9 (as well as in the bivariate models in Table 4).

From Tables 8 and 9, we see that no other interaction with the *Conseil d'État* is significant,[28] then none is included in the regressions.

Last, to ensure that the particular choice of a binary regression among the possible ones has no influence on our results, we compare Logit and Probit models for all our regressions: pro-defendant decisions with and without interaction with the *Conseil d'État* (Tables 10 and 11), reversal decisions with and without the interaction (Tables 12 and 13).

For all the regressions, the results for Logit and Probit approaches are rigorously identical: same significance, same elasticity, same $R2$ and even a same measure of concordance (C-stat). As a consequence, it does not really matter which model is selected.

As regards the regressions for referral decisions, an additional variable needs to be included. For obvious reasons, a referral decision to a lower court is strongly correlated with a reverse

[28]The interaction between the *Conseil d'État* and the *Procedure* variables is significant in Table 8, but the *Procedure* variable is not first order in our analysis: it represents an appeal filed by a party on the ground of a lack in the respect of the legal procedure.

Table 6: Logit model of pro-defendant decisions
$(Prodef = \alpha_0 + \alpha_1 Defappeal + \beta_i X_i)$

| | Conseil d'État | | Cour de cassation | |
|---|---|---|---|---|
| | Restricted | Complete | Restricted | Complete |
| Defendant appeal | -3.628**** | -4.375**** | -1.773**** | -1.817**** |
| | (0.929) | (1.121) | (0.238) | (0.226) |
| Compliance | 2.484*** | 3.515*** | 1.387**** | 1.461**** |
| | (0.904) | (1.202) | (0.252) | (0.265) |
| Public service | n/a[1] | n/a[1] | -0.282 | -0.480 |
| | | | (0.806) | (0.823) |
| Legal ground | | | | |
| Compensation (benchmark)[2] | | - | | - |
| Proof | | -2.624 | | -0.335 |
| | | (1.978) | | (0.339) |
| Causality | | 0.401 | | -0.737 |
| | | (2.062) | | (0.401) |
| Uncertainty | | 0.404 | | 0.414 |
| | | (1.980) | | (0.442) |
| Procedure | | -2.396 | | -0.355 |
| | | (2.222) | | (0.392) |
| Polluted resource | | | | |
| Water (benchmark)[2] | | - | | - |
| Soil | | -0.433 | | 0.057 |
| | | (1.726) | | (0.364) |
| Air | | -2.311 | | -0.184 |
| | | (1.671) | | (0.381) |
| Sea | | n/a[3] | | 1.007 |
| | | | | (0.700) |
| Noise | | -1.522 | | -0.222 |
| | | (1.622) | | (0.316) |
| Constant | 0.208 | 1.399 | -0.799 | -0.891 |
| | (2.931) | (3.262) | (1.174) | (1.216) |
| Observations | 124 | 124 | 490 | 490 |
| Pseudo-R2 (Mc Fadden's adj) | 0.473 | 0.613 | 0.235 | 0.256 |

Notes. **** $p < 0.001$, *** $p < 0.01$. All the regressions include a year fixed effect. (1) The *Public service* variable is associated to any private firm having a public service mission. Such cases are reviewed by civil courts unless the firm obtained a privilege of public authorities (*Prérogative de puissance publique*). In our database, three cases fall in this category and the decision was each time against the defendant. As a consequence, this variable perfectly predicts a pro-plaintiff decision and has no statistical value. (2) In Logit/Probit regressions, binary variables represent events studied with respect to a benchmark scenario. In our regressions, coefficients of the *Legal ground* and *Polluted resource* variables are estimated as marginal effects with respect to a benchmark situation in which the damaged resource is *Water* and the legal ground is the desire to obtain compensation. (3) Only in one case the polluted resource is the sea in the whole set of judgments by the *Conseil d'État*. Hence, this variable automatically predicts a unique possible event and has no statistical value.

decision.[29] Thus, the *Reverse* variable is added in Table 5. We have an endogeneity problem

[29]One should have in mind that a reversal decision can be partial - in which case it can be followed by a referral decision - but it can also be complete. There are not enough cases for each situation to take into account in fine detail the degree of reversal by the upper court in our analysis.

Table 7: Logit model of reversal decisions
($Reverse = \alpha_0 + \alpha_1 Defappeal + \beta_i X_i$)

| | Conseil d'État | | Cour de cassation | |
|---|---|---|---|---|
| | Restricted | Complete | Restricted | Complete |
| Defendant appeal | -1.464** | -1.999** | -0.710*** | -0.599** |
| | (0.656) | (0.825) | (0.233) | (0.246) |
| Compliance | 1.872** | 1.841* | 0.437* | 0.575** |
| | (0.859) | (0.972) | (0.245) | (0.255) |
| Public service | -0.938 | -2.519 | 0.723 | 0.465 |
| | (1.807) | (2.429) | (0.733) | (0.750) |
| Legal ground | | | | |
| Compensation (benchmark)[1] | | - | | - |
| Proof | | -0.892 | | -0.323 |
| | | (1.423) | | (0.355) |
| Causality | | -0.179 | | -1.195*** |
| | | (1.448) | | (0.404) |
| Uncertainty | | 2.561 | | -0.544 |
| | | (1.716) | | (0.456) |
| Procedure | | -0.581 | | -0.436 |
| | | (1.324) | | (0.376) |
| Polluted resource | | | | |
| Water (benchmark)[1] | | - | | - |
| Soil | | 0.701 | | -0.355 |
| | | (1.188) | | (0.353) |
| Air | | 0.319 | | -0.585 |
| | | (1.289) | | (0.390) |
| Sea | | n/a[2] | | -1.198 |
| | | | | (0.748) |
| Noise | | -1.123 | | 0.047 |
| | | (1.163) | | (0.313) |
| Constant | -2.858** | -2.676 | -1.311 | -1.232 |
| | (1.412) | (1.935) | (1.193) | (1.227) |
| Observations | 124 | 124 | 490 | 490 |
| Pseudo-R2 (Mc Fadden's adj) | 0.209 | 0.301 | 0.08 | 0.107 |

Notes. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. (1) In Logit/Probit regressions, binary variables represent events studied with respect to a benchmark scenario. In our regressions, coefficients of the *Legal ground* and *Polluted resource* variables are estimated as marginal effects with respect to a benchmark situation in which the damaged resource is *Water* and the legal ground is the desire to obtain compensation. (2) Only in one case the polluted resource is the sea in the whole set of judgments by the *Conseil d'État*. Hence, this variable automatically predicts a unique possible event and has no statistical value.

in this regression since referral and reversal decisions both depend on common variables that remain unobservable in our database. Since purely exogenous variables that could be used as instruments are not available, we cannot really deal with this endogeneity problem. However, it should be noticed that when running the following regression :

$$Refer = \alpha_0 + \alpha_1 Defappeal + \alpha_2 Reverse + \beta_i X_i + \epsilon,$$

the covariance between *Reverse* and residuals is very weak, since $cov(Reverse, \epsilon) = 0.0088$. The above mentioned problem may thus be ignored.

Figures 1, 2 and 3 report tests for the reliability - or predictive power - of the previous regressions.

(1) The graph in the upper-left corner represents the marginal effects of our two independent variables. As we can see, the *Conseil d'État* variable lowers the chances of having a pro-defendant outcome, a reversal decision and a referral decision at the $95\%$ confidence interval, i.e. even if we take the lower bound of the confidence interval, we observe that the chances of having a pro-defendant outcome, a reversal decision and a referral decision in the *Conseil d'État* are respectively $4\%$, $5\%$ and $2\%$ lower than in the *Cour de cassation*.

(2) The graph in the upper-right corner represents the sensitivity and specificity of the model. Sensitivity tests the model's ability to identify positive results and specificity is the model's ability to predict negative results. Cut-off probability represents the different threshold above which the predicted values of *Defendant appeal* are considered as being positive, i.e. *Defendant appeal*=1.

(3) The graph in the downer-left corner represents the trade-off in sensitivity for specificity, i.e. the model's ability to detect true positive outcomes (sensitivity) while rejecting false negative outcomes (1-specificity). The area under the curve ($AUC$) provides a graphic analysis of the model's goodness of fit, measuring the probability that an actual positive outcome has a higher predicted probability than an actual negative outcome. According to Hosmer et al. (2013), an $AUC > 0.8$ is considered as an excellent discrimination between true positive and false negative outcomes, and an $AUC$ between 0.7 and 0.8 is considered as an acceptable discrimination. Since the $AUC$ is equal to 0.82 for pro-defendant decisions, 0.72 for reversal decisions and 0.94 for referral decisions, we can conclude that our three models fit correctly the data and provide relevant estimations.

Table 8: Pro-defendant decisions - interaction of all variables with CE

$(Prodef = \alpha_0 + \alpha_i X_i + \beta_i CE * X_i)$

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Defendant appeal | -1.819**** | -1.583**** | -1.663**** | -1.748**** |
| | (0.211) | (0.221) | (0.236) | (0.247) |
| Defendant appeal*CE | -1.347*** | -2.002**** | -1.918*** | -2.092*** |
| | (0.432) | (0.576) | (0.668) | (0.748) |
| Public service | 0.0233 | -0.318 | -0.582 | -0.448 |
| | (0.775) | (0.794) | (0.826) | (0.833) |
| Public service*CE | 0.013 | -0.273 | -0.340 | -0.320 |
| | (0.665) | (0.654) | (0.663) | (0.672) |
| Compliance | | 1.375**** | 1.426**** | 1.447**** |
| | | (0.239) | (0.252) | (0.262) |
| Compliance*CE | | 0.554 | 1.064 | 1.435 |
| | | (0.495) | (0.757) | (0.903) |
| Legal ground | | | | |
| Proof | | | -0.274 | -0.392 |
| | | | (0.347) | (0.357) |
| Proof*CE | | | -1.278 | -0.527 |
| | | | (0.830) | (0.958) |
| Causality | | | -0.819** | -0.785** |
| | | | (0.375) | (0.390) |
| Causality*CE | | | 0.497 | 1.050 |
| | | | (0.932) | (1.059) |
| Uncertainty | | | 0.388 | 0.445 |
| | | | (0.422) | (0.455) |
| Uncertainty*CE | | | 0.120 | -0.975 |
| | | | (1.001) | (1.244) |
| Procedure | | | -0.381 | -0.368 |
| | | | (0.368) | (0.380) |
| Procedure*CE | | | -2.257** | -2.195* |
| | | | (1.097) | (1.133) |
| Polluted resource | | | | |
| Soil | | | | 0.0180 |
| | | | | (0.368) |
| Soil*CE | | | | -2.000 |
| | | | | (1.225) |
| Air | | | | -0.161 |
| | | | | (0.387) |
| Air*CE | | | | -1.170 |
| | | | | (1.242) |
| Sea | | | | 0.933 |
| | | | | (0.684) |
| Noise | | | | -0.296 |
| | | | | (0.323) |
| Noise*CE | | | | -0.667 |
| | | | | (1.028) |
| Risk | | | | -0.465 |
| | | | | (0.489) |
| Risk*CE | | | | 2.688** |
| | | | | (1.316) |
| Constant | -12.00 | -12.87 | -11.64 | -11.92 |
| | (403.6) | (622.9) | (507.0) | (574.1) |
| Observations | 609 | 609 | 609 | 607 |

Notes. **** $p < 0.001$, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 9: Reversal decisions - interaction of all variables with CE
($Reverse = \alpha_0 + \alpha_i X_i + \beta_i CE * X_i$)

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Defendant appeal | -0.842**** | -0.768**** | -0.724*** | -0.726*** |
| | (0.214) | (0.220) | (0.232) | (0.238) |
| Defendant appeal*CE | -1.688**** | -1.693**** | -1.962*** | -1.869*** |
| | (0.476) | (0.517) | (0.633) | (0.662) |
| Public service | 0.882 | 0.755 | 0.600 | -0.496 |
| | (0.718) | (0.723) | (0.734) | (0.740) |
| Public service*CE | -1.247 | -1.286 | -1.519 | -2.188 |
| | (1.539) | (1.590) | (1.725) | (1.822) |
| Compliance | | 0.419* | 0.544** | 0.558** |
| | | (0.234) | (0.245) | (0.254) |
| Compliance*CE | | -0.0972 | -0.516 | -0.770 |
| | | (0.446) | (0.637) | (0.703) |
| Legal ground | | | | |
| Proof | | | -0.201 | -0.130 |
| | | | (0.334) | (0.344) |
| Proof*CE | | | -0.136 | -0.807 |
| | | | (0.763) | (0.924) |
| Causality | | | -0.967** | -1.036*** |
| | | | (0.382) | (0.395) |
| Causality*CE | | | 0.994 | 1.055 |
| | | | (0.852) | (0.927) |
| Uncertainty | | | -0.295 | -0.245 |
| | | | (0.432) | (0.472) |
| Uncertainty*CE | | | 1.367 | 0.00273 |
| | | | (0.984) | (1.255) |
| Procedure | | | -0.242 | -0.228 |
| | | | (0.358) | (0.369) |
| Procedure*CE | | | 0.00975 | -0.358 |
| | | | (0.871) | (0.924) |
| Polluted resource | | | | |
| Soil | | | | -0.258 |
| | | | | (0.365) |
| Soil*CE | | | | 1.456 |
| | | | | (0.914) |
| Air | | | | -0.614 |
| | | | | (0.409) |
| Air*CE | | | | 0.186 |
| | | | | (1.033) |
| Sea | | | | -0.692 |
| | | | | (0.679) |
| Noise | | | | 0.125 |
| | | | | (0.322) |
| Noise*CE | | | | -0.310 |
| | | | | (0.0957) |
| Risk | | | | 0.0480 |
| | | | | (0.0452) |
| Risk*CE | | | | 1.994 |
| | | | | (1.277) |
| Constant | 13.06 | 13.06 | 14.03 | 14.09 |
| | (684.9) | (684.9) | (684.9) | (682.9) |
| Observations | 579 | 579 | 579 | 574 |

Notes. **** $p < 0.001$, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 10: Logit/Probit models of pro-defendant decisions

| | Restricted model (1) | | Restricted model (2) | | Complete model | | Elasticities | |
|---|---|---|---|---|---|---|---|---|
| | Logit | Probit | Logit | Probit | Logit | Probit | Restricted (1) | Complete |
| Defendant appeal | -1.837*** | -1.091*** | -1.857*** | -1.093*** | -1.851*** | -1.089*** | -0.29 | -0.29 |
| | (0.213) | (0.124) | (0.223) | (0.129) | (0.228) | (0.132) | | |
| Conseil d'État (CE) | -0.694** | -0.408** | -0.769*** | -0.452*** | -0.745** | -0.435** | -0.11 | -0.12 |
| | (0.284) | (0.165) | (0.292) | (0.169) | (0.296) | (0.171) | | |
| Public service | 0.332 | 0.157 | 0.253 | 0.129 | 0.285 | 0.143 | | |
| | (0.684) | (0.409) | (0.709) | (0.420) | (0.721) | (0.424) | | |
| Compliance | 1.406*** | 0.817*** | 1.443*** | 0.837*** | 1.464*** | 0.848*** | 0.23 | 0.23 |
| | (0.228) | (0.131) | (0.236) | (0.135) | (0.240) | (0.137) | | |
| Proof | | | -0.415 | -0.226 | -0.473 | -0.261 | | |
| | | | (0.329) | (0.192) | (0.336) | (0.195) | | |
| Causality | | | -0.588* | -0.341* | -0.496 | -0.293 | | |
| | | | (0.351) | (0.205) | (0.360) | (0.209) | | |
| Uncertainty | | | 0.552 | 0.324 | 0.524 | 0.311 | | |
| | | | (0.394) | (0.226) | (0.405) | (0.230) | | |
| Procedure | | | -0.558 | -0.337* | -0.540 | -0.327 | | -0.09 |
| | | | (0.347) | (0.202) | (0.352) | (0.204) | | |
| Soil | | | | | -0.130 | -0.0624 | | |
| | | | | | (0.328) | (0.189) | | |
| Air | | | | | -0.313 | -0.191 | | |
| | | | | | (0.343) | (0.200) | | |
| Sea | | | | | 0.905 | 0.535 | | |
| | | | | | (0.668) | (0.384) | | |
| Noise | | | | | -0.336 | -0.184 | | |
| | | | | | (0.284) | (0.164) | | |
| Constant | -0.811 | -0.458 | -0.978 | -0.541 | -0.865 | -0.484 | | |
| | (1.174) | (0.713) | (1.216) | (0.741) | (1.228) | (0.739) | | |
| Observations | 611 | 611 | 611 | 611 | 611 | 611 | | |
| LR test | 195.354 | 194.007 | 209.050 | 208.045 | 213.407 | 212.388 | | |
| Hosmer-Lemeshow test | 3.32 | 3.79 | 3.46 | 6.72 | 7.15 | 11.44 | | |
| | (0.913) | (0.876) | (0.902) | (0.567) | (0.520) | (0.178) | | |
| McFadden R2 | 0.244 | 0.242 | 0.261 | 0.260 | 0.264 | 0.265 | | |
| Cox-Snell R2 | 0.274 | 0.272 | 0.290 | 0.289 | 0.295 | 0.294 | | |
| C-stat | 77.09 | 76.92 | 77.41 | 76.92 | 77.41 | 76.76 | | |

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses.(1) We provide tests considered as fundamental and sufficient by Peng, Lee, and Ingersoll, (2002). (2) C-statistic measures the model's ability to correctly classify the actual value of *Refer*. For the first column, it means that the model assigned the correct actual outcome in $77.09\%$ of all trials.

Table 11: Logit/Probit models of pro-defendant decisions - interaction with CE

| | Restricted model (1) | | Restricted model (2) | | Complete model | | Elasticities | |
|---|---|---|---|---|---|---|---|---|
| | Logit | Probit | Logit | Probit | Logit | Probit | Restricted (1) | Complete |
| Defendant appeal | -1.602*** | -0.952*** | -1.615*** | -0.948*** | -1.615*** | -0.948*** | -0.26 | -0.26 |
| | (0.224) | (0.132) | (0.234) | (0.137) | (0.239) | (0.139) | | |
| Conseil d'État (CE) | 0.123 | 0.0951 | 0.0702 | 0.0568 | 0.0726 | 0.0600 | | |
| | (0.401) | (0.237) | (0.405) | (0.239) | (0.411) | (0.242) | | |
| Defendant appeal*CE | -1.707*** | -0.976*** | -1.793*** | -1.008*** | -1.739*** | -0.983*** | -0.27 | -0.26 |
| | (0.566) | (0.319) | (0.575) | (0.325) | (0.582) | (0.328) | | |
| Public service | 0.234 | 0.105 | 0.149 | 0.0769 | 0.192 | 0.0982 | | |
| | (0.695) | (0.415) | (0.727) | (0.427) | (0.739) | (0.431) | | |
| Compliance | 1.461*** | 0.852*** | 1.513*** | 0.878*** | 1.523*** | 0.885*** | 0.23 | 0.23 |
| | (0.231) | (0.133) | (0.240) | (0.138) | (0.244) | (0.139) | | |
| Proof | | | -0.447 | -0.244 | -0.495 | -0.272 | | |
| | | | (0.331) | (0.193) | (0.337) | (0.196) | | |
| Causality | | | -0.668* | -0.384* | -0.578 | -0.336 | | |
| | | | (0.352) | (0.207) | (0.362) | (0.211) | | |
| Uncertainty | | | 0.524 | 0.296 | 0.503 | 0.284 | | |
| | | | (0.396) | (0.227) | (0.406) | (0.231) | | |
| Procedure | | | -0.604* | -0.365* | -0.586* | -0.353* | | -0.09 |
| | | | (0.351) | (0.205) | (0.356) | (0.207) | | |
| Soil | | | | | -0.124 | -0.0703 | | |
| | | | | | (0.330) | (0.192) | | |
| Air | | | | | -0.222 | -0.149 | | |
| | | | | | (0.347) | (0.203) | | |
| Sea | | | | | 0.840 | 0.502 | | |
| | | | | | (0.669) | (0.386) | | |
| Noise | | | | | -0.308 | -0.174 | | |
| | | | | | (0.288) | (0.166) | | |
| Constant | -0.881 | -0.504 | -1.048 | -0.581 | -0.937 | -0.524 | | |
| | (1.165) | (0.708) | (1.210) | (0.736) | (1.222) | (0.735) | | |
| Observations | 611 | 611 | 611 | 611 | 611 | 611 | | |

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses.

Table 12: Logit/Probit models of reversal decisions

| | Restricted model (1) | | Restricted model (2) | | Complete model | | Elasticities | |
|---|---|---|---|---|---|---|---|---|
| | Logit | Probit | Logit | Probit | Logit | Probit | Restricted (1) | Complete |
| Defendant appeal | -0.980*** | -0.584*** | -1.953*** | -0.568*** | -0.929*** | -0.551*** | -0.15 | -0.16 |
| | (0.212) | (0.124) | (0.220) | (0.129) | (0.223) | (0.131) | | |
| Conseil d'État (CE) | -0.862*** | -0.531*** | -0.904*** | -0.553*** | -0.901*** | -0.548*** | -0.14 | -0.16 |
| | (0.304) | (0.174) | (0.307) | (0.176) | (0.310) | (0.179) | | |
| Public service | 0.532 | 0.333 | 0.438 | 0.275 | 0.354 | 0.234 | | |
| | (0.635) | (0.384) | (0.641) | (0.387) | (0.644) | (0.388) | | |
| Compliance | 0.362 | 0.240* | 0.438* | 0.281** | 0.438* | 0.273** | 0.05 | 0.08 |
| | (0.223) | (0.131) | (0.229) | (0.134) | (0.233) | (0.136) | | |
| Proof | | | -0.190 | -0.122 | -0.196 | -0.122 | | |
| | | | (0.317) | (0.188) | (0.324) | (0.192) | | |
| Causality | | | -0.786** | -0.469** | -0.832** | -0.486** | | -0.14 |
| | | | (0.356) | (0.209) | (0.362) | (0.212) | | |
| Uncertainty | | | -0.0617 | -0.0506 | -0.0969 | -0.0723 | | |
| | | | (0.394) | (0.232) | (0.403) | (0.237) | | |
| Procedure | | | -0.251 | -0.163 | -0.278 | -0.176 | | |
| | | | (0.336) | (0.198) | (0.341) | (0.200) | | |
| Soil | | | | | -0.163 | -0.0953 | | |
| | | | | | (0.318) | (0.187) | | |
| Air | | | | | -0.726** | -0.393* | | |
| | | | | | (0.363) | (0.205) | | |
| Sea | | | | | -0.734 | -0.412 | | |
| | | | | | (0.671) | (0.376) | | |
| Noise | | | | | -0.0523 | -0.0332 | | |
| | | | | | (0.286) | (0.167) | | |
| Constant | -1.211 | -0.770 | -1.240 | -0.779 | -1.200 | -0.749 | | |
| | (1.195) | (0.714) | (1.207) | (0.723) | (1.214) | (0.728) | | |
| Observations | 578 | 578 | 578 | 578 | 578 | 578 | | |
| LR test | 77.458 | 78.648 | 83.938 | 85.166 | 89.228 | 89.911 | | |
| Hosmer-Lemeshow test | 10.03 | 8.48 | 5.87 | 6.65 | 6.51 | 5.39 | | |
| | (0.262) | (0.388) | (0.662) | (0.574) | (0.589) | (0.716) | | |
| McFadden R2 | 0.144 | 0.116 | 0.123 | 0.125 | 0.131 | 0.132 | | |
| Cox-Snell R2 | 0.125 | 0.127 | 0.135 | 0.137 | 0.143 | 0.144 | | |
| C-stat | 74.91 | 74.05 | 74.05 | 73.70 | 76.12 | 75.61 | | |

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects. Standard errors in parentheses. (1) We provide tests considered as fundamental and sufficient by Peng, C-Y, K.L. Lee, K.L. and G.M. Ingersoll, (2002) An Introduction to Logistic Regression Analysis and Reporting, *The Journal of Educational Research*, 96(1): 1-13. (2) C-statistic measures the model's ability to correctly classify the actual value of *Refer*. For the first column, it means that the model assigned the correct actual outcome in $74.91\%$ of all trials.

Table 13: Logit/Probit models of reversal decisions - interaction with CE

| | Restricted model (1) | | Restricted model (2) | | Complete model | | Elasticities | |
|---|---|---|---|---|---|---|---|---|
| | Logit | Probit | Logit | Probit | Logit | Probit | Restricted (1) | Complete |
| Defendant appeal | -0.767*** | -0.454*** | -0.732*** | -0.433*** | -0.712*** | -0.417*** | -0.13 | -0.12 |
| | (0.224) | (0.132) | (0.231) | (0.136) | (0.235) | (0.138) | | |
| Conseil d'État (CE) | -0.0869 | -0.0678 | -0.0801 | -0.0675 | -0.0925 | -0.0708 | | |
| | (0.397) | (0.235) | (0.403) | (0.238) | (0.407) | (0.239) | | |
| Defendant appeal*CE | -1.667*** | -0.953*** | -1.739*** | -0.986*** | -1.704*** | -0.976*** | -0.28 | -0.27 |
| | (0.587) | (0.325) | (0.588) | (0.326) | (0.594) | (0.328) | | |
| Public service | 0.458 | 0.282 | 0.360 | 0.221 | 0.277 | 0.181 | | |
| | (0.640) | (0.381) | (0.649) | (0.383) | (0.652) | (0.385) | | |
| Compliance | 0.395* | 0.262** | 0.476** | 0.306** | 0.470** | 0.300** | 0.06 | 0.05 |
| | (0.226) | (0.132) | (0.232) | (0.136) | (0.235) | (0.138) | | |
| Proof | | | -0.209 | -0.128 | -0.211 | -0.127 | | |
| | | | (0.319) | (0.190) | (0.326) | (0.193) | | |
| Causality | | | -0.842** | -0.493** | -0.880** | -0.510** | | -0.14 |
| | | | (0.357) | (0.210) | (0.363) | (0.213) | | |
| Uncertainty | | | -0.0981 | -0.0624 | -0.121 | -0.0825 | | |
| | | | (0.398) | (0.235) | (0.406) | (0.239) | | |
| Procedure | | | -0.268 | -0.174 | -0.290 | -0.186 | | |
| | | | (0.339) | (0.200) | (0.344) | (0.203) | | |
| Soil | | | | | -0.139 | -0.0980 | | |
| | | | | | (0.321) | (0.189) | | |
| Air | | | | | -0.673* | -0.376* | | |
| | | | | | (0.366) | (0.208) | | |
| Sea | | | | | -0.767 | -0.434 | | |
| | | | | | (0.670) | (0.377) | | |
| Noise | | | | | -0.0383 | -0.0347 | | |
| | | | | | (0.289) | (0.169) | | |
| Constant | -1.268 | -0.806 | -1.287 | -0.815 | -1.249 | -0.785 | | |
| | (1.191) | (0.711) | (1.203) | (0.720) | (1.210) | (0.725) | | |
| Observations | 578 | 578 | 578 | 578 | 578 | 578 | | |

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All the regressions include year fixed effects.

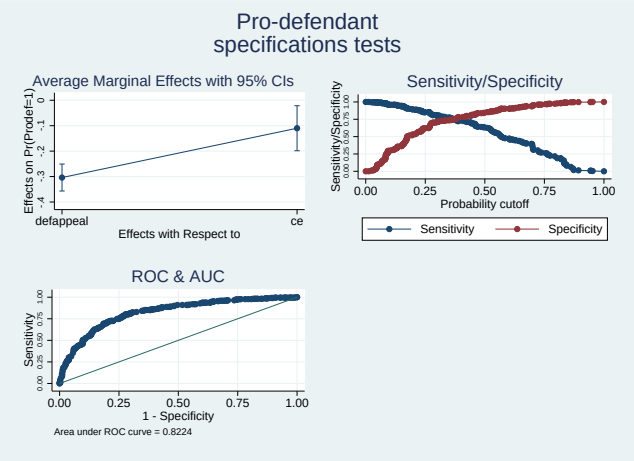


Figure 1: Graphic tests for pro-defendant decisions

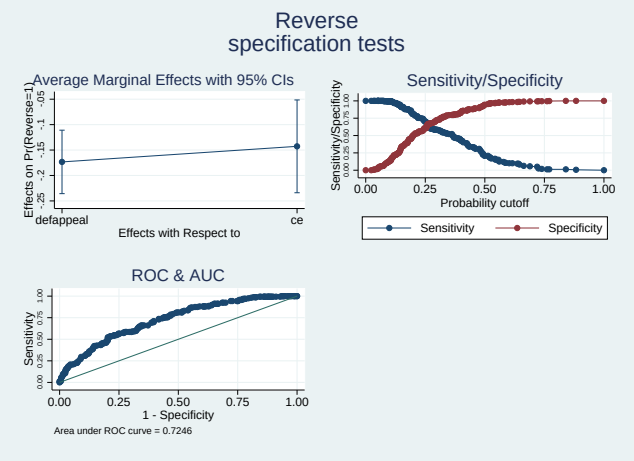


Figure 2: Graphic tests for reverse decisions

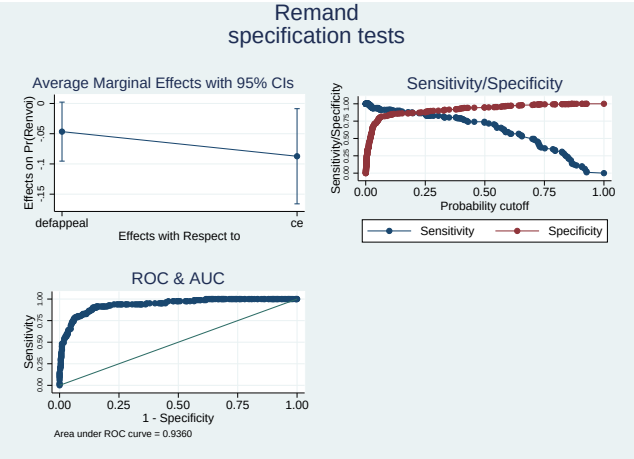


Figure 3: Graphic tests for referral decisions